April 14, 1969

STATINTL

[redacted]
Washington, D.C.

Subject: Project 6619

Dear John:

Enclosed are two (2) copies of Progress Report No. 5 in accordance with the schedule of the subject contract.

Sincerely,

STATINTL

[redacted]
Program Manager

WWM/mls
encl: As stated

Approved For Release 2002/05/08 : CIA-RDP78B04747A001100030045-8

PROGRESS REPORT NO. 5

COLOR IMAGE ASSESSMENT

PROJECT 6619

by

STATINTL [redacted]

Period: March 1 through March 31, 1969

Approved For Release 2002/05/08 : CIA-RDP78B04747A001100030045-8

PROGRESS DURING THE PERIOD

The selective generation of analytical trichromatic exposure tables has occupied the major portion of the program effort up to this time. The work has now progressed to the point that exposure tables may now be selectively generated. All major programming tasks associated with this effort have been completed. Further research and perhaps some minor reprogramming concerning the criteria by which the decision is made to generate a new exposure table appears necessary.

Two more programs were delivered to the customer during the past month. The completed characteristic vector generation program termed VECTOR was documented, block diagrammed, and delivered. The procedure utilized in the calculation of the characteristic vectors has been outlined in detail in the final report issued under the previous effort*. In general terms, the program VECTOR reads normalized exposure tables from the program MATCHM (to be described), forms the variance-covariance matrix, and calculates the eigenvalues and the characteristic vectors for this matrix, once for each of the subtractive primaries, cyan, magenta, and yellow. Because of the program length, a termination and restart feature has been added. Output from this program includes the trace of the variance-covariance matrix and the latent root determined for each vector computation iteration as an indicator for convergence. When the iterative method used converges to a characteristic vector, the eigenvalue, the number of iterations required, the sum of all eigenvalues determined divided by the trace, and the characteristic vector are printed. Also printed out are the Y scaler values are determined for the specific vector computed.

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* [redacted] Advanced Color Image Assessment Concepts. Final Report FR 68-6 [redacted] July 1968). STATINTL

Also delivered to the customer was the program MATCHM which normalizes the input set of exposure tables prior to input into the characteristic vector (VECTOR) program. This procedure reduces the variance magnitude that appears in the variance-covariance matrix and simplifies the computation of the characteristic vectors.

Work on the direction cosine portion of the program is underway and should be completed by the end of next month. Direction cosine polar plots have been made for type 8443 material. The 8443 emulsion dye system appears to follow Beer's law and yields linear, constant angle polar plots.

The special analytical color friskets on SO-151 emulsion
STATINTL have been produced at [redacted] These friskets contain a standard 21 step tablet, linear resolution targets at different exposures, a grainless medium density block for inherent noise studies, a micro-step wedge, an "L" type resolution target and four contrast edges in two orientations and nine exposure levels. These friskets will be submitted with trace instructions to the customer. The delivery and subsequent tracing of these friskets will initiate the MTF portion of this program.

WORK PLANNED FOR NEXT PERIOD

Work during the upcoming month will include the completion of the exposure table generation package, the completion of the direction cosine package, and the initial work on color analytical modulation transfer functions (MTF).